FRIENDS' INTELLIGENCER.

VOL. XII. PHILADELPHIA, SEVENTH MONTH 21, 1855. No. 18.

EDITED BY AN ASSOCIATION OF FRIENDS.

PUBLISHED BY WM. W. MOORE,
No. 100 South Fifth Street,
PHILADELPHIA,

Every Seventh day at Two Dollars per annum, *payable in advance*. Three copies sent to one address for Five Dollars.

Communications must be addressed to the Publisher free of expense, to whom all payments are to be made.

MEMOIR OF CAROLINE E. HALSTED.

(Concluded from page 260.)

"The old year 1853. Thou art almost gone. Thy last sun has already set. A few short hours will complete thy career. Ere thou passeth away forever, I fain would recall to mind how it has been with me, during thy reign over the earth.

"Well, when thy spring first appeared, there was a shadow on my heart, which its opening beauties could not dispel. Unlike thy predecessor, thou hast not witnessed many uncommon events connected with my life, yet the period of thy existence will be long remembered.

"A moderate degree of happiness has at times been my allotment, but the dark waves of sorrow have so far quenched the ardor of youth, that I have felt like one bowed with the weight of many years. Many divine favors have been vouchsafed, although at times the spring of life has been so low, that like the heath in the desert, I have not known when good cometh.

"There has been sealed upon my mind a belief that the Lord has a work for me to do, for which he is preparing me. Lately this impression has been forcibly renewed. I have sometimes thought it might be in the imagination only, but I cannot put it aside. In my pilgrimage here, I have already passed through much that is trying and know not what is yet to come, but I fully believe, my greatest happiness depends upon submission to divine requirements; may I always remember this, and act consistently therewith.

"As I ponder upon the past and cast a glance at the unwritten leaves of the future, my spirit swells with emotion too great for utterance. My life has seemed perhaps to the careless observer to have been exempt from severe trials, as few knew the deep plungings of my soul in sorrow's dark waters. But I do not complain, as the great God over all, has condescended to be my guide and support, notwithstanding my many transgressions of his law.

"In days gone by, I was wont to pencil the blank pages of the future with glowing pictures, but as one by one these were erased by the hand of reality imprinting thereupon dark clouds and foaming billows, I now only have courage to wait, and endeavor to prepare myself for whatever may come. If it be joy, it will be the more welcome, from being an unexpected guest. If it be sorrow, I trust strength will be given to bear it.

"I feel sensible, however, of much frailty; and at times suffer under deep discouragements. My only hope is in Thee, Lord. Be thou near me all my life long. If afflictions be needed to wean me yet more from earth, spare me not, only let thy own right hand uphold me.

"1st mo. 1854. The commencement of a new year. In all my undertakings, I feel to crave direction of Him who doeth all things well.

"3d mo. I have been blessed of late with I (trust) some manifestations of divine approval, and my spirit has been much more cheerful than during the past year. I am encouraged to believe that though I may not have gained much or made much progress in the heavenward journey, during that period, I have not retrograded. I find, however, that there is yet a great deal for me to overcome, before I can be found worthy of an intimate acquaintance with the 'Fountain of all perfection and the source of all good,'—that acquaintance which leads to everlasting peace."

Caroline's health had long been delicate and there was but little prospect of renovation. But though subject to seasons of great prostration and suffering, she indulged not in the inactivity her state might seem to warrant, but influenced by a desire to use the talents intrusted to her care, she had gathered around her some of the neighboring children, and for some considerable time taught them regularly. Early in 1854, hearing a teacher was wanted in a Friends' settlement in Maryland, her attention was arrested, and the belief gradually sealed upon her mind that this was the field in which she was called to labor. A distant prospect of this has been alluded to in her reminiscences of 1853. As the subject matured, notwithstanding her feeble physical powers and the distance that would separate her from her family, she felt best satisfied to move forward in it, believing it a path of

duty, and this she had ever found led to peace. Her hopes were also somewhat raised as to the effect on her constitution of change of climate.

She has said but little in her diary, in reference to this important step. This omission may be attributed to her general unwillingness to bring much into view (*by expression*) her ground of action. This feeling was thus spoken of by her to the writer of this sketch: "If I am favored to move under heavenly direction, I would rather my *actions* should tell from whence they proceed, than that my tongue should blow a trumpet before me."

Her own record under date of 3d and 5th mos. 1854, will now be of interest.

"3 mo. 1854. I have to-day closed my little school. It has been a source of much pleasure and also instruction to me. I have felt the responsibility that rests upon a teacher—consider it nearly approaching that of a parent. I look upon the past winter's labor as preparatory to a larger field of the same character, but what is best for me, the all-wise Governor only knows, and to his appointment and disposal I feel easy to leave my future movements. My health has been rather better than usual, though I am not able to endure much fatigue.

"5 mo. 26. This day, to which I have looked forward for several years, with interest, has now nearly passed by. It is rendered memorable by two circumstances. An eclipse of the sun, the most remarkable one that has taken place in a long time. Six years ago, while a merry school girl, I noticed in my astronomical books an observation respecting it, and the time of its occurrence, and these questions involuntarily arose in my mind, *Where shall I then be? How shall I then feel?* These questions can now be answered. I am in the city of Philadelphia, at the house of a kind friend (W. W.,) who a few days ago was an entire stranger, on my way to the sunny South, expecting soon to engage in the duties of teaching, the responsibilities of which weigh upon my mind, in connection with the prospect of being more than 500 miles from my dear home, in a strange land, and among strangers. A feeling of both bodily and mental weakness causes me almost to shrink from the undertaking, but the secret belief that it is at least sanctioned by my heavenly Father, gives me a hope that it will be as well with me if I go, as it would have been had I remained enjoying the endearments and comforts of home, yea and *far better*, if I be found in the performance of clearly defined duty. The pleasures of earth are tarnished in my view. I have no hope of permanent joy, from aught but that which is derived from or may be ascribed to divine perfection. If favored to abide at the Master's feet, come what may, *all will be well*. If otherwise, ill will betide me, however favorable may be the appearance of the situations which I may occupy. Oh Lord, thou knowest that I love thee and that I am waiting to follow thee whithersoever thou mayest lead."

Here her memorandums close. Of her sojourn in Maryland she has left no record, save in the hearts of those among whom she labored, and a few letters to her distant friends. She was warmly received and affectionately cared for by those among whom her lot was cast. It may truly be said the divine blessing rested upon her labor of love and duty. The value of such a teacher appeared to be fully appreciated, and the effects of her care during the first quarter were such, as to promise a rich harvest. On her leaving for home at the time of the summer vacation, doubts were felt, whether her health would allow her to resume her labors in that part of the vineyard, where her influence was so helpful and her interest so great. Week by week her return was anxiously looked for by her beloved pupils, but her strength rapidly failed. In a letter to a friend dated 9 mo. she says, "My prospect of returning South this winter is nearly closed, on account of my health. If I should get relief before long, I think I shall make the attempt, though many of my friends think it would be a rash act. I have been permitted at times, since my return, to feel a satisfaction in my labors there, and a renewed assurance that I was not out of my place. Whether the sojourn in the country has been of any advantage to my health or not, I cannot tell, but I think it has, notwithstanding the present unfavorable appearances. However, let it terminate as it may in respect to the body, I believe it is well for me that I went."

From this time her disease steadily advanced. A hope of improvement was occasionally indulged, but it soon became evident to the sufferer as well as to her friends that the work would ere long be finished. Caroline was early favored with resignation to this allotment. At this early stage of her earthly existence, her ties to earth were loosened, and she could look forward with a feeling of quiet trust to the moment when the spirit would be released from its frail tabernacle. This trust, this faith, carried her *beyond time*, so that at seasons she could rejoice in the glimpse of the glories that were ere long to be more fully revealed.

During the forepart of her illness, she suffered much for want of the *sensible* evidences of the presence of Him whom her soul loved, but while this dispensation caused her "to mourn as a dove," she believed it designed for her further purification, and desired that every thing needful to this end, might be patiently borne. *Through all*, her "hope was in the mercy" of her Father in heaven, and ere the time of her departure came, He was graciously pleased to dispel every cloud, and reveal again the light of his countenance, proving that He is "near to them that seek him, to those who hope in his mercy."

A few days before her close she shewed how strong had been her love of nature's works, by asking for her herbarium, which she had preserved as a memento of her Southern home, and pointed out some of the leaves as especially beautiful when gathered; and on the last afternoon of her life she requested her windows opened, that she "might hear *once more* the song of the returning birds," which for some days had been seen perching near by, as though watching for the hand that had formerly so loved to feed them.

She greatly feared being drawn out into unwarranted expression of her feelings respecting her own state and the approaching great change, but she loved the company of those who could understand the secret workings of the spirit, and mingle with her in silent adoration of that Power, through whose all-sufficiency she felt she had attained a state of acceptance. The blessing of an unclouded mind even to the last was granted, and the calm composure that rested upon her countenance, under a full consciousness that the time of release was near, was strengthening to those who stood by, causing them to feel, that verily in passing through the valley of the shadow of death this humble, dedicated spirit witnessed the sustaining arm of Divine Power to be round about, and underneath.

A full and undoubted evidence that all was indeed well with the departing spirit was afforded, and a halo of glory seemed to encircle her brow at the moment when the spirit returned to God, who gave it.

EARLY PIETY.—NO. LVI.

JANE FRYER, of Warrington, Lancashire, daughter of Benjamin and Margaret Fryer, was born at Kendal, in Westmoreland, in the year 1761. From an early age she was religiously disposed. Her mother died when she was very young, in consequence of which, a considerable care devolved upon her who was the eldest child. She afterwards went to be an assistant in the family of a friend at Bristol, where she was much beloved for uprightness and integrity, and where she evinced much care and interest for the welfare and preservation of children. This benevolent and beneficial temper of mind, was the means of inducing her to open a school at Warrington, to which town she had removed. Here, also, she was greatly esteemed by those who united with her in religious profession, as well as by others who entrusted her with the care of their children; an employment for which she seemed to be particularly well qualified. Nor did she teach by precept alone; her example, as a religious character, was always salutary; and on both accounts her loss was much lamented.

Her great concern for the welfare of youth remained with her in her declining state of bodily health. She said, "If my being afflicted might but furnish instruction to our young women, I should be glad. I have been very desirous that their minds might be weaned and brought from the exteriors that are about them. Oh! what vanity they will feel them, when such a time as this comes. My mind has been exercised on their account as I sat in our meetings. I have longed that they might experience the work of real religion; but things have felt so low, that something of an alarming nature must come to arouse them; and that language hath been sounded in mine ear, 'Cry aloud, and spare not; lift up thy voice like a trumpet;' but, alas! who is sufficient for these things? I was but a child."

At another time, she signified that being favored with great calmness, and her mind covered with universal good will, she was induced to wonder at so general attachment in her fellow mortals to sublunary things.

Once, when two friends were with her, she said, "Oh! may I have patience to wait the Lord's time, without offending him in being over anxious. Let us unite together in desiring I may be preserved in perfect resignation to his holy will." After a short pause of silence, she engaged in prayer, thus: "O, dearest Lord! Almighty Saviour, if thou wilt condescend to favor thy poor, unworthy, afflicted child, with the lifting up of the light of thy countenance, who am deeply tried. But thou knowest best, O Father, what is best for us, and necessary that we should pass through, in order to fit us for thy glorious kingdom; where nothing that is impure or unholy can ever enter. Therefore, I beseech thee, dearest Lord, let not thine hand spare, nor thine eye pity, till thou hast made me perfect. Then I hope to be dissolved, poor dust and ashes, and clothed with angel's raiment. O permit me to join them in praises and thanksgiving. My will, thou knowest, has been subservient to thine; and I have endeavored, according to my small ability, even from a child, not to offend thee, O my God! Therefore, I beg of thee, to permit the guardian angel of thy presence to conduct my poor soul to its everlasting rest, believing, if I offend thee not, there is one prepared for me, where I may for ever ascribe praises to thy holy name."

A little after, she desired her friends to pray for her, telling them it was a trying season, and that she was sometimes ready to say, "Why am I thus prolonged?" adding, "Thou O Lord, knowest for what end, and thy time is ever best. Oh, that I may be favored with thy Divine presence! That will make up for all."

At another time she said, "My mind enjoys great quietness. Oh! the kindness and condescension of the Almighty to me!" She said also to the friend mentioned above, "I love you, and desire that our spirits may unite together in worshipping Him, who can kill and make alive.

I have had to-day sweetly to feel, like a foretaste, of that peace which I humbly hope to partake of soon, without interruption." One of her visitors remarking, that she believed all doubting would be done away before the final removal of Jane, the latter replied, "I have thought so to-day;" and then she broke forth in praising the Redeemer. She also expresed her desire for a release, in the words of the Psalmist: "Oh, that I had wings like a dove! Then could I fly away and be at rest." "I lie lingering," she added, "just on the brink of eternity. What an awful situation! But as the clay to the potter, who dares say, what dost thou? When a child I loved retirement, and such awfulness attended my mind, though I had no language to utter, nor knew what it meant; yet I durst not disobey these tender sensations; and I believe the Almighty owned these seasons and opened my understanding in early years. I have been desirous not wilfully to offend Him; and have had many hidden exercises, remembering it was said, 'In the world ye shall have trouble; but in me peace;' which brought great sweetness over my mind. Blessed for ever be His name." Soon after, as she was lying in great composure and serenity of mind, she left the toils of mortality, in the twenty-seventh year of her age. Her decease was on the 22d of Eighth month, 1788.

THE WRESTLING CHAMPION.

"At London," says Sewel, "there is a custom in summer time, when the evening approaches and tradesmen leave off working, that many lusty fellows meet in the fields to try their skill and strength in wrestling, when generally a multitude of people stand gazing in a ring. Now it so fell out that Edward Burrough passed by the place where they were wrestling, and standing still among the spectators, saw how a strong and dexterous fellow had thrown three others, and was waiting for a fourth champion, if any durst venture to enter the lists. At length, none being bold enough to try, Edward Burrough stepped into the ring, which was commonly made up of all sorts of people; and having looked upon the wrestler with a serious countenance, the man was not a little surprised, instead of an airy antagonist to meet with a grave young man, and all stood, as it were, amazed at this sight, eagerly expecting what would be the issue of this combat. But it was quite another combat Edward Burrough aimed at. For having already fought against spiritual wickedness that had once prevailed in him, and having overcome in a measure by the grace of God, he now endeavored also to fight against it in others, and to turn them from the evil of their ways. With this intention, he began very seriously to speak to the bystanders, and that with such a heart-piercing power, that he was heard by this mixed multitude with no less attention than admiration; for his speech tended to turn them from darkness to the light, and from the power of satan to God. To effect this, he labored with convincing words, showing how God had not left himself without witness, but had given to man a measure of his grace, and enlightened every one with the light of Christ. Thus zealously he preached; and though many might look upon this as a novelty, yet it was of such effect that some were convinced of the truth; for he was a breaker of stony hearts, and therefore, by a certain author not unjustly called *a son of thunder*, though he omitted not in due season to speak a word of consolation to those that were of a broken heart and a contrite spirit. —*Barclay's select anecdotes.*

BEAUTIFUL ILLUSTRATIONS OF LIFE.

Bishop Heber, upon departing from India, said in his farewell sermon—"Life bears us on like the stream of a mighty river. Our boat at first glides down the narrow channel—through the playful murmuring of the little brook, and the windows of its glassy borders. The trees shed their blossoms over our young heads; the bowers of the brink seem to offer themselves to our young hands; we are happy in hope, and we grasp eagerly at the beauties around us; but the stream hurries on, and still our hands are empty. Our course in youth and manhood is along a wider, deeper flood, amid objects more striking and magnificent. We are animated by the moving picture of enjoyment and industry passing us; we are excited by short lived disappointment. The stream bears us on, and our joys and our griefs are alike left us. We may be shipwrecked, but we cannot be delayed; whether rough or smooth, the river hastens toward its home, till the roar of the ocean is in our ears, and the waves are beneath our feet, and the land lessens from our eyes, and the floods are lifted up around us, and we take our leave of earth and its inhabitants, until of our further voyage there is no witness, save the Infinite and Eternal.

INDIVIDUAL RESPONSIBILITY.

The moment a man parts with moral independence—the moment he judges of duty, not from the inward voice, but from the interest and will of a party; the moment he commits himself to a leader or a body, and winks at evil because divisions would hurt the cause; the moment he shakes off his particular responsibility, because he is but one of a thousand, or a million, by whom the evil is done—that moment he parts with his moral power. He is shorn of the energy of single-hearted faith in the right and the true. He hopes from man's policy what nothing but loyalty to God can accomplish. He substitutes coarse weapons, forged by man's wisdom, for celestial power.—*Channing.*

For Friends' Intelligencer.

FIRST DAY OF THE WEEK, CALLED THE SABBATH.

Even among professing Christians there is a diversity of opinion respecting this day. All believe it right that one day in seven should be set apart for rest and a more favorable opportunity for assembling for the purpose of religious worship; but, like many other favors, the design is frustrated by an improper use. Either too much reliance is placed upon it, or its obligations are disregarded almost entirely by spending this day in a more profligate manner than any other, attending places of diversion, and otherwise spending the precious time unprofitable both to body and mind.

Many professing Christians, who are ready superstitiously to ascribe every accident on the Sabbath to a violation of its requisitions, do not object to taking up a collection to give their religious teachers a reward for their services on that day, while they are often accessory to fining those making no profession of religion, who are receiving wages for their labor.

I am a friend to the proper observance of the day, and believe it right to refrain from all ordinary business when it can possibly be avoided, but by attaching holiness to it above every other day of the week, there is danger of making an idol of it, and thereby destroy, in a great measure, the real intent of the first promoters of Christian order.

Clearfield co., Pa., 6th mo. 1855.

THERE IS MONEY ENOUGH.

Eight thousand five hundred square miles of this earth's surface are devoted to the culture of tobacco. The quantity annually produced has recently been estimated to be four and a half billion of pounds, or four and a half pounds to each inhabitant. The first cost of one year's growth of tobacco, at four and a half cents a pound, is one hundred and eighty millions of dollars; but the sum annually expended for tobacco by the whole humrn family, is thought to be at least five hundred millions of dollars. This would keep an army of five hundred teachers at work, at a salary of one thousand dollars each. It would put a railroad round the world. It would pay for three railroads, double track, from New-York to San Francisco. It would support all the honest poor on the globe. If it were within the compass of human power—which it is not—to spend so vast a sum judiciously in improving the human race by knowledge, discipline and art, it would in two or three generations, banish from the world ignorance, want, crime and disease. Ah! man earns money enough; what he wants is the wisdom to spend it!

A CONQUERED PEOPLE.—LIFE IN BRITISH INDIA —A FEARFUL PICTURE.

A work on Continental India, from the pen of the Rev. J. W. Massie, a British Missionary, has just been published. It contains many appalling details. The writer states that, except in some of the chief cities, most of the provinces in India are thinly inhabited; vast tracts of country lie uncultivated and desolate, and the habitations of the people are utterly wretched. Their food is of the worst kind, and insufficient to sustain animal strength. The mendicant has no resting place, but is exposed to desertion, to be an outcast, or hurried from village to village, lest his death should entail a burden on his poor neighbors. The clothing of the laboring poor is not so much as will be a veil to cover the shame of nakedness: a rag not worth *three pence* is often the only garment for tender and feminine delicacy, for the aged parent, and the man of gray hairs. Few, if any, of this class, in some districts, ever know what it is to enjoy the warmth and shelter of a midnight covering, when the blanket would be valued and its protection be a blessing. Native laborers work for native masters, sometimes for so low wages as a penny or two pence per day; and they are deemed well paid if they receive, as servants to Europeans, four pence daily. It is, however, in the oft-recurring scenes of famine, or dry seasons and partial crops, that the physical wretchedness of Hindoos is fully developed. None but those who have been eye-witnesses of the horrors then realized, can imagine how prostrate and ruined is their condition under such a visitation.

Mr. Massie says:—

"I have stood among them when the dead were lying at my feet and when the dying fell by my side; when the leprous, maimed in hands and feet, exhibited their loathsome extremities; when old age and childhood were covered by the ulcers and pustules of the small-pox; when haggard famine sat upon the wan and sunken cheek, and the hollow eye of thousands; when it was necessary to mete out the charity of a generous foreign community under the protection of armed police peens; and when the wailings and feeble cry of the hungry and exhausted pierced and agonized the heart. The spectacle was not likely soon to fade from the memory, or the causes to escape inquiry. To prevent the tens of thousands perishing in one country from passing into neighboring districts, it was deemed expedient to erect barriers, and place an armed force, lest they should paralyze the local benevolence which was struggling to mitigate the sufferings of the surrounding poor. I have seen the miserable and emaciated victims of famine searching among the camels, elephants, and cattle for particles of grain which had passed undigested. Such scenes, if they occurred only once in the history of a nation,

were enough to excite the commiseration of mankind, and bring suspicion upon the wisdom of the men by whom the people were governed. Unhappily, however, they have been of frequent recurrence in British India; *periodically* have they been experienced, three times within fifteen years. Private letters, official accounts, and other sources of information, unite with my evidence in representing that people subject to such alarming and consuming destitution, famishing myriads depending on the scanty supplies of charity, hundreds and thousands perishing from want and attendant diseases, villages and rural districts depopulated by migration or death, the streams and rivers choked or poisoned by the putrid carcasses of a people dying in too great numbers to be buried by surviving relatives—death not only arrayed in its most ghastly forms, but also serving to generate diseases at which trembling mortality shudders, and over which human courage and science can exercise no control."

He adds that cholera, with all its terrors, frequently prevails, and that in 1833, more than 150,000 miserable creatures fled from the country, to seek in the neighborhood of the capitals, the means of sustaining life. Myriads perished at home and on the roads; and the remnant who did not abandon the country parts, and yet continued to sustain life, were reduced to a state of emaciation which defies description. Their personal appearance was scarcely human; their anatomy was nearly as much developed as that of actual skeletons; the articulations of each joint, but for the skin, might have been traced; their stomachs were unnaturally swollen, and their color was of the deepest jet. These were British subjects, who had been taken under control and made tributaries, to the support of government; whose land was taxed so highly that no more than seven-sixteenths of the produce went to the husbandmen; and whose fruits of industry could be sold to no other merchant than their irresponsible government; while they had been able to purchase goods in no market but what their rulers furnished. It is a country where the tax and land collectors, where the judges and arbiters in all contests or disputes, are the armed conquerors and rulers of the region.

He adds, that the British power has been stretched over Hindostan, by the employment of native armies. One nation has been marched against another, and one class has helped to subdue the other. While the British conquerors have never employed a larger force than thirty-seven thousand European troops, the native Hindoo ranks have sometimes numbered more than two hundred and sixty thousand fighting soldiers, accoutred and upheld by British pay. It may, therefore, be supposed, as was the case, that the policy of the conqueror has been to elevate the few and depress the multitude; to cherish a native aristocracy, the landed gentry, and a dominant interest. A few in every province will be recognized as large proprietors, wealthy baboos, powerful zemindars, and prosperous adventurers. And although the ancient rajahs, or chiefs of feudal dynasties, have passed away, men have been raised up who occupy their places and power. Not a few among the Hindoos have acquired property and influence by their subserviency to English employers, and their consequent facilities for traffic and lucrative speculation. Such men have retired to their own country, and secured to themselves distinction and influence among their countrymen. These, however, must be regarded as exceptions to the general condition of the people, rather than as any exemplification of the beneficence of British rule in India.—*Exchange paper.*

DIVISIBILITY.

There are many instances in which matter has been divided into almost incredible minuteness. Gold has been hammered so thin, that 360,000 leaves are required to make an inch in thickness. 360,000 leaves will make 1,800 volumes of 200 pages each, so that in the small space of one inch our little readers might have a library containing as many volumes as the Wilmington Library.

The relative position of the heavenly bodies as seen through a telescope, are marked by fine lines of wire, that cross each other at right angles. It is necessary that these wires should be exceedingly fine, otherwise, being magnified by the eyeglass, they would have an apparent thickness that would render them inapplicable to the purpose. The spider's web was formerly used, but as the power of the glasses was very much increased, these were found to be too coarse.

In the early part of the present century, Dr. Wollaston succeeded in obtaining wire for this purpose, that did not exceed the 18,000th of an inch in diameter. It is said that a quantity of this wire equal in bulk to a common rifle ball, would reach from New York to New Orleans. This wire is made of platinum, and the process by which it was made is very ingenious. The Doctor had platinum wire drawn out as fine as possible, and then drawn through the axis of a small glass tube, into which melted silver was poured. The silver and platinum now formed one wire, which was again drawn out as fine as possible. The whole was next put in nitric acid which dissolved away the silver but left the platinum wire so fine that it could not be seen with the naked eye.

The organized world affords still more striking evidence of the extreme divisibility of matter.

The blood which flows in the veins of animals, is not as it appears to be, a uniform fluid, but is

composed of small red globules floating in a transparent fluid called serum. In the human species the diameter of these globules is about the 4000th of an inch, and consequently in a drop of blood that would hang suspended from the point of a fine cambric needle, there would be no less than a million of these globules. But animalcula have been discovered that are smaller than these globules; if these have globules of blood that bear the same proportion to the size of their bodies, as the globules of our blood do to the size of our bodies, by what process of calculation shall we arrive at numbers sufficiently expressive to convey an accurate idea of the minuteness of these globules?—*Delaware Journal.*

ELECTRICITY—CONDUCTION.

The following is the substance of a lecture recently delivered by Professor Faraday, before the Royal Society, on a disputed question of electrical conduction:

"The point in dispute is, whether electricity can be transmitted through fluid bodies without decomposing them. In explaining and illustrating the subject, Prof. Faraday introduced a number of experiments, to show the relative powers of different substances of conducting frictional and voltaic electricity. The conduction of frictional electricity by wires, by the hand, and by a solid piece of nitre, when applied to a charged electrometer, are supposed to be produced without any chemical action, and is called 'conduction proper;' but when liquids are the media through which electricity is conducted, decomposition takes place, and many experiments seem to confirm the opinion, which by some electricians is considered an established law, the amount of decomposition has a definite relation to the quantity of electricity transmitted. Faraday's researches have established the fact, that when an electric current is passing through a fluid and decomposing it, the process of decomposition takes place instantaneously in each particle of the fluid that serves to conduct the electricity, and that a train of decompositions and recompositions is thus set in action. Whether any portion of electricity passes by "conduction proper" beyond that which thus decomposes the fluid, is the question that remains to be determined, and on which Prof. Faraday expressed himself still doubtful, though it might be gathered from his observations that his opinion leans towards the hypothesis of partial 'conduction proper' through fluids. To give an idea of the vast quantities of electricity that are excited by chemical action, and the difficulty of estimating the amount transmitted, he kept a galvanometer deflected for a few moments by the excitement of electricity in a small pair of platinum and zinc plates applied to his tongue, and observed that in that short space of time a greater quantity of electricity had been called into action by those small plates than is contained in several thunder storms. From this it might be inferred that a quantity of voltaic electricity, inappreciable by the instruments employed in ordinary experiments, might be conducted unobserved, without decomposing action, which quantity, however, if it had been in the state of intensity of frictional electricity, would exhibit powerful effects.

Professor Faraday noticed the experiments of electricians on the Continent, which appeared to confirm the notion, that even frictional electricity cannot be conducted through water without decomposing it, and in opposition to that hypothesis, he exhibited others, which he said it is difficult to explain, except on the supposition that water conducts directly, in the same manner as solid conductors. Two wet muslin bags, blown out, to resemble in effect two large soap bubbles, were held in the electric field, between the electrical machine and a conductor connected with the earth, without being so near as to receive any charge. When removed together, and applied to the electrometer, there was no indication of electricity; but when one bag was separated from the other whilst under the influence of electrical induction, they then exhibited electrical conditions, one being negative and the other positive, in the same manner as two metallic balls would. The evaporation of spirits of wine without decomposition, by the heat of two immersed conducting plates from a voltaic battery, was also noticed, as evidence of 'conduction proper' by a fluid. Prof. Faraday, in conclusion, expressed his ignorance of the nature of the mysterious power of electricity, and said, with respect to the special action of the force he had that evening noticed, his mind 'is still in doubt.'"

VALUE OF TRIFLES.

A kind word, a gentle act, a cheerful smile,—what sunshine they bring with them; especially to the sorrowing heart. How much by these we may add to the sum of human happiness, and to the pleasant memories of those who meet us in life's journey. It is these little kindnesses, these gentle offices of courtesy and affection, that make up half the real blessedness of life. And they cost so little! They ask so small a portion of our time and labor; so little sacrifice of our convenience or comfort.

In order to grow wiser, says the Westminster Review, perhaps we could hardly do better than recur to the little parable spoken some time since, on the border of Wales, by an itinerant preacher of the Evangelical Alliance: "I was going towards the hills," he said, "early one misty morning. I saw something moving on

the mountain side, so strange looking that I took it for a monster. When I came nearer to it, I found it was a man. When I came still nearer to him, I found he was my brother."

FRIENDS' INTELLIGENCER.

PHILADELPHIA, SEVENTH MONTH 21, 1855.

DRUMMOND LIGHT.

The three angles of the enormous triangle by which a topographical survey is primarily conducted, sometimes eighty or a hundred miles asunder, must be visible from one another; but how to produce the visibility? In the earlier surveys, where such daring distances were not attempted, a signal light was in some cases obtained by reflecting the light of the sun from a well adjusted surface of polished tin, or by Bengal lights being fired at night, or by a powerful Argand lamp being placed behind a lens or before a parabolic reflector; but Lieut. Drummond, of the English Navy, during the progress of the Irish survey, made a happy suggestion, which eclipsed in efficiency all others.

In what is called the *Drummond* or *Lime* light, a small ball of lime is exposed to the action of a spirit flame fed by pure oxygen gas; the flame, in a highly-vivid state, heats the lime to an intense degree, and in this heated state it emits a light of surprising brilliancy, far exceeding that of any flame yet seen. So beautiful was Drummond's apparatus constructed, that the lamp fed itself with spirit and with oxygen, supplied itself with balls of lime, as each one slowly wasted, and reflected its surpassing light from an exquisitely polished parabolic surface of silvered copper. It was not merely figuratively, but literally true, that a piece of lime not bigger than a boy's marble, emitted a light at Londonderry which was visible at Belfast—a distance in a direct line of nearly seventy miles. On a later occasion, Colonel Colby made a lime-light signal visible from Antrim, in Ireland, to Ben Lomond, in Scotland, a straight line distance of *ninety-five miles.—Daily Morning Times.*

READ BEFORE YOU BUY.

At a public auction of the library of Dr. Francis Bernard, (an eminent English physician,) it happened in the progress of the sale, that the auctioneer held up a particular book, and called the attention of the crowd to it, saying, "that there was an important observation written in the volume he was about to sell, in Dr. Bernard's own hand!" This intimation produced a spirit of rivalry among the bidders; but when the book was knocked down at a high price, the purchaser read to his astonishment: "I have perused this book, and it is not worth a farthing."

For Friends' Intelligencer.

CHURCH AND STATE.

No man who has a sense of his own resposibility, and who fully appreciates his duty to the world, and more especially to the Church, can look calmly on the fluctuating scenes of our own time, without being impressed with the magnitude of the work to be done, and the apparent inefficiency of the means employed to accomplish it. The subject of slavery, the absorbing question of the present day, offers a fitting theme to illustrate the principle which may be recommended as the safety lamp that is to guide the workman in those dark recesses which the reformatory movements of our day propose to explore and purify.

Several branches of the Christian Church have already separated upon this engrossing topic; and in politics the same dividing line is being drawn. The parties and factions that have hitherto occupied places of power, appear to be sinking into imbecility, while the slave power on the one hand, and its opponents on the other, are rising in strong antagonism with each other, mingled, unhappily, with much bitter and hostile feeling. It becomes us to enquire, how far church and state should mingle together in the strife, or, rather, how far the church should go in its award of commendation to the political movements of the day; movements that seem to have a tendency toward the support of testimonies held by religious professors, and especially by the Society of Friends.

The question is often asked, whether it is not the duty of a good man to vote; and to vote in support of those testimonies which the Society of Friends holds dear. The answer of this question must be met in every man's conscience; and, considering a vote in the light of a testimony against evil, most religious men, probably, will answer in the affirmative. But the spirit of warfare in the political arena of party strife, and sectional prejudice, or bitterness, should be carefully guarded against. How rife this is, may be learned from almost every daily paper that issues from the press; how rare the spirit of Him who preached a charity that suffereth long, may be learned from the same source. It is the natural and inevitable result of opposing political parties that they should indulge in harshness, and allow their prejudices, in some measure, to bias their judgment. The North and the South are opposed to each other, and the political leaders of both sections abuse and vilify their opponents: the papers of one are filled with stories of wrong and outrage, while those of the other become the justifiers of evil, and accusers in their turn. The spirit of detraction and war abound in each, and it becomes us to ask, how far we are committed to this spirit. A firm, determined opposition to the sins of the land becomes the Christian warrior, but how far his weapons should accord with those

of the world, is a serious question, involving not only individual welfare, but public and general good.

Slavery has drawn a line of separation between the North and South, not only on political grounds, but in the religious, social, and educational interests of the two sections. The members of the visible church may be separated by geographical lines, but should the bond which unites heart to heart be broken, or limited by sectional bounds? Must there be jealousy and abuse, or even prejudice, against such as feel their responsibility, and who desire to do their duty but are ignorant of it? We are too apt to measure the sin of slaveholders by what we know would be the enormity of our own guilt, if we were to adopt their practices. The mantle of our charity is not wide enough to cover the multitude of their ignorance and infirmities. While it may be our duty to come out from among them and be separate in practice, we should still be near them in sympathy, labor and prayer. Let us not fall into the general tide of carnal opposition, nor become standard bearers in political strife, but rather the simple messengers of that gospel which longeth for the heathen and refuseth not the vilest of the race. P.

7*th mo.* 1855.

CURIOSITIES OF SCIENCE.—COMBUSTION.

During a recent lecture by Prof. Faraday, at the Royal Institute, London, a piece of pure iron, peculiarly prepared so that its particles might present a large surface to the action of the oxygen in the atmosphere, was ignited, and continued to burn like tinder. Some iron filings and gunpowder were mixed together, and sprinkled into the flame of spirits of wine burning on a plate, when the iron filings caught fire and burnt in bright sparks, whilst the gunpowder passed through the flame without igniting, and the quantity that fell on the plate was afterwards dried and exploded. Lead prepared in a similar way was shown to be still more inflammable, for it caught fire in a beautiful flame when exposed to the air. Prof. Faraday stated that lead is nearly as inflammable as phosphorus, and he explained the cause of its not burning in ordinary circumstances, to be that the solid product of combustion forms a film that prevents contact with the oxygen, and the conducting power of the other parts of the metal draws off and dissipates the heat. He pointed out the admirable arrangements by which these combustible properties of the metal are kept in proper control, and bodies that are really so in inflammable are made to serve as strong resisters of combustion. Prof. Faraday said that though animal heat is not, generally speaking, caused by combustion, yet the analogy between the processes is so close, that he could not, with satisfaction to himself, conclude his lectures on the chemistry of composition without alluding to the subject, and showing the nature of the charges that are going on in the lungs during respiration. He then arranged some experiments to prove the absorption of carbonic acid in the lungs, and he presented on a plate a mass of charcoal weighing three lbs., as representing the quantity that passes from a man during every twenty-four hours. The volume of carbon in the atmosphere, though it contained only one per cent. of carbonic acid, is, he stated, greater than all the carbon that is stored in coal strata in the earth, or spread on the surface of the globe in vegetation.—*Scientific American.*

DEATHS BY HEAT.

In no country in the world does the terrible *coup de soleil*, or sun-stroke, prevail to such an extent as in our own during hot weather. In Europe it is comparatively unknown, nor is it ever found to exert its fearful influence in the hottest torrid clime to the degree in which it is found in New York. The great cause is really not so much the extreme heat itself, as its action upon those not accustomed to its influence. Thus the *coup de soleil* is more frequent when there has been a cool spell of weather within the past twenty-four hours.

It is a great pity that we are all so much wedded to mere use and habit that we cannot be induced to lay it aside even for the sake of gaining the greatest amount of personal convenience, and perhaps when life itself is at stake. Most decidedly a very great pity. For were it not for this, we would lie by, from twelve meridian until four, P. M., and make it up by early rising and going to bed a little later. There are divers little inconveniences in the way of this arrangement, such as bank hours and broker's hours, but we were not thinking of things in the way, but of things as they should be, if all were in proper order.

But those who are sun-struck are not generally busied in counting-rooms, but are day laborers, and men who might as well be at work in the fresh, cool, early morning, as during the atrocious heat of noon-day. In some parts of Europe, it is no unusual thing to see day-laborers going to their work as early as three in the morning. But these are people who go to roost with the birds, if not a little in advance of the feathered gentry.

Much as is said about the heat, it is not generally known that there are very few places in tropical climates where the thermometer rises much higher than in Philadelphia. Parkyns in his Life in Abyssinia, speaks of the thermometer as being at 120 to 130 deg. in the sun, which would about correspond to 98 or 100 deg. in the shade. There are one or two unfortunate places in the hottest parts of India, as well as the cele-

brated Pan of Matanzas, where it is said that the proverb is reversed, and that he fares worst who goes out of the fire into the pan; but we cannot hope to excel in all things, and will therefore admit that there are, or may be, one or two places which excel Third and Chestnut streets, Philadelphia, Nassau street, New York, and the whole of Albany, in heat. But in the tropical regions referred to, the natives have the sense to go in not only when it rains, but when it shines. This is a piece of wisdom which we have yet to learn.—*Evening Bulletin.*

From the Leisure Hour.

"BLIND AS A MOLE."

On a bright sunshiny day "in the merry month of May," a few years ago, I found myself, in company with an old schoolfellow, scrambling all fours over an abrupt piece of rock which looks up on the one side to Edina's hoary-headed guardian, Arthur's Seat, and down on the other into the placid face of Duddingston Loch. The spot is to a certain extent historic ground, for along this little valley the young chevalier's army defiled in 1745, on their way to the field of Prestonpans. I cannot exactly say what was the aim of our walk: certainly my friend had an eye to the picturesque, and inhaled many a good draught of light and shade; while I picked up tiny morsels of grass and trashy-looking weeds, eyeing them with greater glee than the Bathurst or San Francisco pilgrim fingers his jaundice-faced idol. Having no exclusive object in our ramble, we felt at liberty to draw amusement and instruction from any-thing, whether from the cirrus clouds chasing each other across the clear blue field of heaven, or those noisy gentlemen the sable daws, careering round the distant towers of old Craig-Millar Castle. The attention of my companion was attracted by a rustling noise close under his feet; and making a by no means graceful descent to the spot whence it proceeded, he noticed appearing from a compact mass of stones and rubbish the hind quarters of a dark rat-looking animal, which seemed violently convulsed by vain efforts to pierce further into the ground. To solve, if possible, his difficulty, I joined him, and seizing the stumpy tail, pulled from its dark and winding retreat a struggling mole. Many of our country readers, when boys, may have thoughtlessly caught such by means of a trap—thoughtlessly, we say, for the mole is not an animal to be foolishly destroyed, as it often has been. As suddenly as a greasy-tailed pig the animal slipped from my fingers, and before I could retake him, was half buried among the roots of the grass: but when swung comfortably in a pocket-handkerchief, escape was impossible, and home we went with our prize, which puffed and snorted in the worst imaginable humor.

Anxious to watch the habits of our singular friend, a temporary habitation was constructed for him, from an old tea-chest, on which was fitted a glass lid, with sufficient apertures to admit an abundant supply of air. A quantity of earth served him for a bed, and worms, in dozens constituted his daily rations. Could any reasonable mole desire more? And yet, on the third day from his capture, he was among the things which were!

Believing that some little interest may be taken even in a humble mole by the readers of the "Leisure Hour," I purpose to detail our observations, first, on his habits, and then on his structure. Determined to decide for ourselves, if possible, the much-vexed question of the mole's "eyes, or no eyes," we set about a series of simple experiments to test our friend's susceptibility to light. Of course we had the authority of many naturalists in favor of his eyesight, and among the rest, that of old Buffon; but, unfortunately for the credibility of all his statements, we had also read in the same gentleman's work. that four hundred men breakfasted on the egg of a dodo, and this dreadful swallow made us very suspicious.

As the box in which the mole resided was provided with a glass top, we could at pleasure keep him in comparative darkness, or shower in upon him a flood of light, by simply moving the gas flame so as to have it shaded by the side of the box, or placed in full blaze above the glass. When in the former state, the little nibbler devoured his supper of worms with great avidity, seeming to be as comfortable on the surface of the mould as if in his subterranean burrow; but no sooner was the light brought to bear upon him than he displayed the utmost uneasiness, and dived into the profundity of the soil. In his marches, also, which, by the way, though not so full of grace as a dancing-master's walk, were yet far from ungainly, he invariably appeared cognizant of the presence of an opposing obstacle without coming in actual contact with it and turned right or left, face-about, in quite a a dignified style. In some instances the smell of the obstacle might have been the indicator of its presence; but in order to overrule this objection, a variety of objects were employed, as the human hand, a piece of wood, a table knife, a bit of looking-glass, a tea-plate, and several other articles; and invariably with the same result: so that the next time a man runs his head against a post, we will try to forget the old saying, "as blind as a mole."

In the pursuit of his prey, we had another proof of our friend's eyesight. A few worms were dropped quietly into the box, out of the mole's sight: they speedily crept into the mould, but in their perambulations again saw light at intervals, not unfrequently a few inches before Mr. Mole's nose; but wo betide the unhappy wight who did so! he was carefully watched

until an opportunity occurred of getting him endwise into the sharp-toothed jaws of his destroyer, when he was quietly munched up, just as a child would a stick of barley-sugar. This last fact was one of the most interesting which came under our observation. Why, with his strong jaws and lancet teeth, he would not seize a worm by the side, as I have seen a waternewt do scores of times, and make his own of it, instead of allowing one after another to scamper off from between his very jaws, I cannot understand; but that such is the case I am well assured. Our verdict on the eyes of the mole amounts to this, that the mole does see, but that his range of vision is very limited.

Having thus declared that our friend has the power of sight, it would be still more satisfactory to find, if possible, his eyes. For this purpose a party of young naturalists sat on his body, while one, with all the sage demonstrativeness of a Cuvier, proceeded with the work of dissection. As our observations of the head entirely agree with those of H. K. Creed, Esq., of Christ's College Cambridge, and published by him in the "Naturalist," February, 1852, it will suffice to give his account. "Having lately," he says, "been carefully examining the eyes of the common mole, I find that the little black tubercules which are seen, on turning aside the hair, on each side of the head, have each an optic nerve communicating with the brain." This is sufficient proof that the reviled little animal in question enjoys the blessings of sight; for surely an All-wise Creator would never form an animal with all the apparatus for vision, and yet deny it the use of it.

Passing now from the eyes to the general structure of the mole, the first thing that strikes us on removing his coat is the extraordinary development of the muscles of the forepart of the body, in comparison with the hinder quarters. The arms, or fore legs, are short, stiff-looking appendages, and covered with what would seem to be a superabundance of flesh. This, however is not the case; large as the quantity is, it is firm, useful flesh, giving healthy strength to every action of the body. The chest also is protected by a thick and broad expansion of muscles. But, lack-a-day for the hind-legs, they are as poor as a rat's. Certain it is, that were the creature divided about the middle in two pieces, it would be difficult to get over the impression that the one part belonged to a larder resident, and the other to a poor half-starved outcast. The aim in this unequal distribution of flesh is very evident. From the nature of the mole's habits, it requires prodigious strength in its fore quarters, that it may overcome the many obstacles to its subterranean explorations.

Nor is the difference in the skeleton less marked. The bones of the hind leg exhibit no material difference from the corresponding bones in higher animals, being elongated and cylindrical in shape, as in the legs of a hare or rabbit. In the fore-legs, however, we have a structure which almost defies description, though we hope by aid of the accompanying skeleton to give some notion of its peculiarities. To begin with the scapula, or shoulder blade, which in man and most other mammals assumes a somewhat triangular form, having two flat faces, one of which is ornamented with an upright ridge; this bone is familiar to every one who has picked the fiddle-bone of a rabbit. In the mole the scapula loses its expanded form, and appears as a prismatic club, with three sharp edges, and furrows between them. Collar-bones attach the shoulder-joint to the breast-bone, and are present only in a few of the lower animals, as monkeys, kangaroos, bats, and two or three others. In shape, it may be said generally to resemble Hogarth's line of beauty, being a long and beautifully curved bone; in our subject, however, its length is contracted, and its breadth increased, being a short, thickened body, with greater breadth than length. Next look at the humerus; instead of a fine long cylindrical bone, a shortened, flattened, and sinuated piece of osseus matter is presented, with curves and points, and flats and depressions, sufficient to puzzle a mathematician. The aim of this wonderful formation of bone is the same as that of the large development of muscle; namely, to give sufficient strength to enable the burrowing creature to overcome almost any difficulties, and resist impending dangers, which would inevitably destroy an animal of another organization.

It is impossible, in contemplating the anatomy of such a creature, not to feel that it is as perfect in its kind as the gigantic elephant, or the well proportioned horse; and that it as forcibly displays the power, wisdom and goodness of the great and benevolent Maker of us all.

The census of 1850 shows that the oldest person living in the United States was 140. This person was an Indian woman, residing in North Carolina. In the same State was an Indian aged 125, a negro woman 111, two black females 110 each, one mulatto male 120, and several white males and females aged from 106 to 114. In the parish of Lafayette, Louisiana, was a female black, aged 120. In several of the States there were found persons, white and black, aged from 110 to 115. There were in the United States in 1850, 2,555 persons over 100 years. This shows that about one person in 9,000 will be likely to live to that age. There are now about 20,000 persons in the United States who were living when the Declaration of Independence was signed in 1776. They must necessarily be about 80 years old now, in order to have lived at that time. The French census of 1851 show only 102 persons over 100 years old;

though their population was near 36,000,000. Old age is, therefore, attained among us much more frequently than in France.—*North American.*

FUNCTIONS OF THE ATMOSPHERE.

"The daily miracles of life attract no attention, because habit has dulled our sensibilities; but they are none the less extraordinary, none the less cogent as arguments in behalf of a great First Cause. For an illustration take the atmosphere.

In this subtle fluid, which overflows land and deep, like another ocean, all creatures live and move, as fish in the sea. Without the atmosphere, the lungs would cease to play, the blood to keep pure, pulsation to go on, existence to continue. If, by any strange alchemy of nature, the atmosphere could be suddenly extirpated, all created animals would die, like mice under the exhausted receiver of an air-pump. To the atmosphere we are indebted for the vital principle that feeds our fires.

We cook our food, warm our dwellings, and drive our locomotives through the direct aid of the atmosphere. It is the atmosphere in motion that propels ships across the deep, or brings us cooling gales in the heats of summer. Sight is reflected by the atmosphere, so that we owe to it the painted clouds of sunset and the refulgent tints of dawn.

The atmosphere is the principal agent in modifying climate. The rains of spring, the snows of winter, the gentle dew, the pelting shower, all owe their origin to the atmosphere. Lieutenant Maury has felicitously, described it as the mighty pumping machine, drawing water up from the ocean, carrying it in the form of vapor to the land, and precipitating it over the thirsty fields and dry brooks in the guise of rain. The heats of the southern Pacific tropics, during the winter of our northern hemisphere, evaporate immense quantities of water from the ocean, which, ascending to the high strata of the atmosphere, are borne on aerial currents to the northeast, till striking the Rocky Mountains, they are condensed by the great cold of those enormous elevations, and copious falls of hail, snow, or rain are the result. It is the atmosphere, bringing us the warm vapors of the southern summer, which are, on their arrival here in winter, converted into snow or rain, which fills our rivers, irrigates our fields, and secures to us our harvests. Without the atmosphere, the Mississippi would soon run out, and even the great lakes dry up into deserts.

To the atmosphere the entire vegetable world is indebted for its food. Plants live on carbon as men on oxygen, and it is the atmosphere which distributes both.

An eloquent writer has said, that the gas which we breathe to-day was distilled for us, yesterday perhaps, of the rhododendrons of Carolina, or the palms of the Orient. Animals can go and seek their food, but vegetables must have it brought to them: and therefore without the atmosphere, which serves as their carrier, they would perish at once.

It is the atmosphere which softens the glaring light of day, and thus protects the eye-sight. It is the atmosphere purifies pestilential regions, by sending its currents, scavenger-like, to sweep away foul gases. Yet how little is this all-pervading influence of the atmosphere realized!

Were any new agent to appear, whose power was but a tithe as extensive, the whole civilized world would be lost in anxiety and wonder: but because men have become habituated to the functions of the atmosphere, its daily miracles pass without awakening a thought."

TAKE CARE OF THE EYES.

Until one begins to feel the effect of impaired vision, he can hardly estimate the value of eye-sight, and consequently, from ignorance or carelessness, he is apt to neglect a few simple precautions, by the observance of which his sight might be preserved.

First never use a writing-desk, or table with your face toward a window. In such case the rays of light come directly upon the pupils of the eyes, and causing an unnatural contraction thereof, soon permanently injure the sight. Next, when your table or desk is near a window, sit so that your face turns from, not toward, the window, the oblique rays strike your eye, injuring it nearly as much as the direct rays when you sit in front of the window. It is always best to sit or stand while reading or writing with the window behind you; and next to that, with the light coming over your left side; then the light illumines the paper or book, and does not shine abruptly upon the eye-ball.

The same remarks are applicable to artificial light. We are often asked what is the best light; gas, candles, oil, or camphene. Our answer is, it is immaterial which, provided the light of either be strong enough, and do not flicker. A gas fish tail burner should never be used for reading or writing, because there is a constant oscillation of flickering of the flame. Candles, unless they have self-consuming wicks, which do not require snuffing, should not be used. We need scarcely say that oil wicks which crust over, and thus diminish the light, are good for nothing; and the same is true of compounds of the nature of camphene, unless the wicks are properly trimmed of all their gummy deposit after standing twenty-four hours.

But whatever the artificial light used, let it strike the paper or book which you are using, whenever you can from over the left shoulder.

This can always be done with gas, for that light is strong enough, and so is the light from camphene, oil, &c., provided it comes through a circular burner like the Argand. But the light, whatever it be, should always be protected from the air in the room by a glass chimney, so that the light may be steady.—*Boston Herald.*

The following lines are from the pen of JAMES MONTGOMERY. They breathe a spirit of no ordinary feeling.

BROKEN TIES.

The broken ties of happier days,
How often do they seem,
To come before the mental gaze
Like a remembered dream:
Around us each dissevered chain
In sparkling ruin lies,
And earthly hand can ne'er again
Unite those broken ties.

The parents of our infant home,
The kindred that we loved,
Far from our arms perchance may roam
To distant scenes removed;
Or we have watched their parting breath,
And closed their weary eyes,
And sighed to think how sadly death
Can sever human ties.

The friends, the loved ones of our youth,
They too are gone or changed;
Or worse than all, their love and truth
Are darkened and estranged.
They meet us in a glittering throng,
With cold averted eyes;
And wonder that we weep our wrong,
And mourn our broken ties.

Oh! who in such a world as this
Could bear their lot of pain,
Did not one radiant hope of bliss,
Unclouded yet remain?
That hope the sovereign Lord has given,
Who reigns beyond the skies,
That hope unites our souls to heaven
By truth's enduring ties.

Each care, each ill of mortal birth,
Is sent in pitying love,
To lift the lingering heart from earth,
And speed its flight above,
And every pang which rends the breast,
And every joy that dies,
Tells us to seek a heavenly rest,
And trust to holier ties.

DON'T KILL THE BIRDS.

Don't kill the birds!—the little birds
That sing about your door,
Soon as the joyous spring has come,
And chilling storms are o'er.

The little birds!—how sweet they sing!
Oh! let them joyous live;
And do not seek to take the life
Which you can never give.

Don't kill the birds!—the pretty birds
That play among the trees!
'Twould make the earth a cheerless place,
Should we dispense with these.

Don't kill the birds!—the happy birds
That bless the field and grove;
So innocent to look upon,
They claim our warmest love.

WHY THERE IS NO RAIN IN PERU.

In Peru, South America, rain is unknown. The coast of Peru is within the region of perpetual southeast trade winds. Though the Peruvian shores are on the verge of the great South Sea boiler, yet it never rains there. The reason is plain. The southeast trade winds in the Atlantic ocean first strike the water on the coast of Africa. Travelling to the northwest, they blow obliquely across the ocean until they reach the coast of Brazil. By this time they are heavily laden with vapor, which they continue to bear along across the continent, depositing it as they go, and supplying with it the sources of the Rio de la Plata and the southern tributaries of the Amazon. Finally they reach the snow-capped Andes, and here is wrung from them the last particle of moisture that the very low temperature can extract. Reaching the summit of that range, they now tumble down as cool and dry winds on the Pacific slopes beyond. Meeting with no evaporating surface, and with no temperature colder than that to which they were subjected on the mountain tops, they reach the ocean before they become charged with fresh vapor, and before, therefore, they have any which the Peruvian climate can extract. Thus we see how the top of the Andes becomes the reservoir from which are supplied the rivers of Chili and Peru.—*Maury's Geography of the Sea.*

"Tobacco has spoiled and utterly ruined thousands of boys, inducing a dangerous precocity, developing the passions, softening and weakening the bones, and greatly injuring the spinal marrow, the brain, and the whole nervous fluid. A boy who early and freely smokes, or otherwise largely uses tobacco, is never known to make a man of much energy of character, and generally lacks physical and muscular, as well as mental energy. To people older, who are naturally nervous, and particularly to the phlegmatic, tobacco may be comparatively harmless, but even to these it is worse than useless. We would particularly warn boys who want to be anybody in the world, to shun tobacco as a deadly poison."—*Selected.*

PRESERVATION OF FRUIT.

A half dozen quart bottles were found in the foundation of a building in Burlington, erected many years ago, which seemed as fresh as if they had been put up last year. From inquiries it was found that the family were in the habit of burying bottles of green currants in the cellar, and that these must be at least 30 years old. The finding of these bottles proves that green fruit is susceptible of preservation for many years, when carefully put up so as to exclude the air.

Let the bent of thy thoughts be to mend thyself, rather than the world.

GRASS, SAND AND DUST.

The traveller who has visited Holland, has doubtless remarked a very simple contrivance by which the vast piles of sand which line its coast and partly constitute its dykes, are secured from shifting in the wind and thus becoming a terrible nuisance to the inhabitants. This is effected by planting them with certain grasses which flourish in the most exposed situations, are very tenacious of life, and spread with remarkable vigor. The sand is thus bound down and its surface eventually converted by the decaying grass and its parasites into a thin soil. The grasses thus used are the sea-reed—*arundo arenaria*—and the sea lyme grass or the *elymus arenarius*. The former as all familiar with Dutch manufactures are aware, is largely used in the construction of ropes, coarse matting, and with osiers, in the construction of the ground work of the dykes themselves. There is also a spreading weed—much grown in Holland—available for no other purpose save for binding the sand down, but as it perfectly answers the purpose, it also is much encouraged.

It may not have struck our readers that by the use of these, or of some other grasses, the only great real inconvenience of railroad travel in this country, might be entirely obviated. We refer to the dust. On several roads in our country, common grass has either grown, or been sown up to the edge of the rail, and those who have travelled on these grass-grown roads can testify to their comfort. But it is not impossible that the Holland weed above alluded to, may be found to answer the purpose even better than grass, which is not sufficiently self-planting to fully answer the purpose. And last, not least, we firmly believe that among the large sums of money now annually expended in ornamenting our sea-side watering places, it would be found that a small investment in the *arundo arenaria* and its useful colleagues would be found to be remarkably well laid out. Specimens of the grasses have been deposited with the Department at Washington.

We are accustomed to notice too slightly, the immense increase of the use of iron, in numerous branches of industry. Of a hundred ships built on the Clyde, ninety-seven are now iron screw steamers; and even sailing vessels are turning into iron; of the vessels now constructed in the British islands, hardly more than seven per cent. are of wood. The mammoth steamer, Great Eastern, now building by the Eastern Company, is to have three thousand tons of iron in her machines, and ten thousand in her hull. She is built of iron from the keel to the deck inclusive. She is intended to carry eighteen thousand tons of coal, enough to carry her to Australia and back. Her whole register is twenty-five thousand tons, and her engines of ten thousand horse-power. The latter are five in number, one being intended, separately for each of two pair of paddle-wheels and a screw. Her average speed is estimated at fifteen knots an hour, and she is to make her trial trip to America and back in two weeks. Our coal and iron interests have evidently not much cause for despair; and Pennsylvania may expect that her importance as a member of the Union, will be of long continuance.—*Evening Bulletin.*

AN IMPORTANT DISCOVERY—SLAG OF MINERAL FURNACES.

A late number of Household Words contains quite an elaborate article explanatory of a discovery made by Dr. W. H. Smith, of Philadelphia, by which the refuse of mineral furnaces can be converted into many useful purposes.

It is stated that by a careful analysis of this hitherto rejected product of iron works, it has been ascertained that it is composed in the main of lime, silica, and alumina, with an occasional admixture of magnesia and sulphur. In all parts of the world the same results are arrived at. The slag of France or Sweden differs in no essentials from that of Britain or the United States. It is scarcely necessary to remind the reader of the similarity in the process of smelting ores, and the vast operations of Nature beneath the crust of the earth, where, by a like agency of heat, mountainous deposits of igneous rocks are constantly thrown off.

The rocks of this origin are met with in stupendous masses, in most parts of the world.—While Nature on the one hand employs her igneous products in the construction of gigantic mountain-palaces, man, well aware of their great value, equally applies those rocks, under the names of granite, feldspar, basalt, greenstone, syenite, porphyry, serpentine, &c., in the construction of his most elaborated architectural edifices. High geological authorities tell us that if we examine the composition of the crust of the globe, we shall find that of all the earths and earthy substances therein, three only will be ascertained to constitute its great bulk, namely, silica, alumina, and lime—precisely those which mainly compose the slag of the smelting-house.

The worker in ores when he is occupied with his blast-furnace, is in fact but repeating on a small scale the grandest operations of Nature deep in the bowels of the earth. Heat is the great first agency employed by Nature and by the Philosopher in the decomposition and recombination which produce some of the most beautiful and useful products with which we are acquainted. Dr. Smith has shown that the rubbish of the smelting house is identical in character, and equally valuable, with most of the igneous rocky substances.

Like many other valuable discoveries, this result was arrived at while searching for something else. It is well to relate how this truth, so interesting in itself apart from commercial results, was seized upon by the American philosopher, since it may tend to encourage such as may be toiling in other fields of research. Impressed with a conviction of the influence of electricity upon life, health, and disease, Dr. Smith, at that time a practitioner in Philadelphia, commenced a series of experiments in electro-agencies on the human frame. Success in that question induced him to carry his researches to vegetable life, and from animate he was led to direct his observations to inanimate objects. Mineral matter received attention from him, and, weighing well the geological facts alluded to above, Dr. Smith bent the energies of his mind to trace the effects of electricity in all these combinations and reproductions.

Comparing the condition and character of slag with that of the igneous rocks of Nature, he felt that to electric agency must be attributed the cause of the great difference existing between them. In order to test this, he took a piece of the vitrified mass of slag hot from the furnace-mouth, and applied to it a metallic rod. At the point where this electric conductor came in contact with the substance, the vitrified mass assumed a pulverulent character; several rods were employed, and at each point of contact similar changes in the condition of the slag were observable. The electricity rapidly engendered during the smelting process was parted with as quickly as the application of the metal conductors, and hence the sudden and marked change in the condition of the mineral.

In order more fully to test this theory, the experimenter threw a quantity of the molten slag, fresh from the furnace-mouth, into water. Every atom of the liquid being a good conductor of electricity, rapidly absorbed it as it lowered the temperature of the mass; and the immediate consequence was that the mineral matter fell into a coarse powder entirely deprived of its former cohesion or solidity.

From these trials Dr. Smith felt convinced that his electrical theory was correct, and that it was to the rapid giving forth of its electricity by sudden cooling in contact with conducting media that slag owed its brittle character—in other words its want of cohesion and its tendency to pulverize. He reflected that the great masses of igneous rocks upheaved from the centre of heat, were in a position for gradually cooling; their gigantic extent would ensure that result—hence their extreme hardness and durability.

With the view of completely testing the accuracy of his electrical theory, Dr. Smith caused a quantity of slag, fresh from the smelting-furnace, to flow upon a non-conducting substance, where it was allowed to cool much more gradually than was usually the case. To his great delight, he found that he had obtained a most complete verification of his opinion. The product thus obtained had entirely lost its semi-vitreous and friable character, and assumed a dense, solid and rocky nature, capable of resisting the heaviest blows, and altogesher assuming the peculiarities of the igneous rocks.

Having obtained this result, the experimenter proceeded to other trials. By continuing the molten slag when removed from the furnace at a high temperature in an oven, where it was afterward allowed to cool very gradually, and then run into models of a non-conducting substance, the material was found to have become altogether de-vitrified and to have taken a beautifully veined and granulated character of extreme hardness, approaching to the solidity and strength of the finest marble. By varying the heat applied, by the admixture of coloring matters, and by a subsequent polish applied to the surface, the experimenter has succeeded in producing a perfect imitation of cornelian, agate, malachite, or any other of the more valuable mineral products.

Here then we see how an inquiry having for its object the elucidation of a purely scientific theory has led the inquirer by imperceptible steps to a most valuable discovery, by means of which many millions of tons of hitherto refuse matter may be converted into really useful and valuable materials for the builder, the architect, and the decorator.

FRANKLIN ON LIGHTNING RODS.

We find in a well thumbed copy of Poor Richard's Almanac, of the year 1753, directions how to secure houses and ships from being struck by lightning. As Franklin published the Almanac, and without doubt wrote the directions for constructing the lightning rod described, we publish it as a curiosity:

How to secure Houses, &c., from Lightning.

It has pleased God in his Goodness to Mankind at length to discover to them the Means of securing their Habitations and other Buildings from Mischief by Thunder and Lightning. The Method is this—Provide a small Iron Rod (it may be made of the Rod iron used by Nailers) but of such a length, that one end being three or four feet in the moist Ground, the other may be six or eight feet above the highest part of the Building. To the upper End of the Rod fasten about a Foot of Brass wire, the Size of a common Knitting-needle, sharpened to a fine Point; the Rod may be secured to the House by a few staples. If the House or Barn be long, there may be a Rod and Point at each End, and a Middling Wire along the Ridge from one to the other. A House thus furnished will not be damaged by Lightning, it being attracted by the Points, and passing through the Metal into the

Ground without hurting any Thing. Vessels also, having a sharp pointed Rod fixed on the Top of their Masts, with a Wire from the Foot of the Rod reaching down, round one of the Shrouds, to the Water, will not be hurt by lightning.

JEWISH ALIEN LAWS.

The oldest law of which we have record adjusting the relations and defining the duties of aliens who came within the limits of the State was incorporated in the statutes of the Jewish theocracy. In that text-book of the most admirable civil jurisprudence the world has seen we find it enjoined upon the nation that "If a stranger dwelleth with thee in your land thou shalt not vex him. But the stranger that dwelleth with you shall be unto you as one born among you, and thou shalt love him as thyself, for ye were strangers in the land of Egypt; I am the Lord your God." Such was the beautiful enunciation and the divine authentication of the principle of national hospitality. The reason for it, or rather the motive that should incite to it, is given as the occasional requisition for its exercise toward ourselves. It is an imperial fruit of the comprehensive law of true charity, which in the mutations of society and in the orderings of Providence that drive the various individuals of the race from one land to another, may become of practical advantage to all.

Nor was this an isolated injunction. The same terms of hospitality were often enjoined upon the chosen people in language equally emphatic and significant. Most careful provision was to be made for the interests of the alien, and in return for such courtesy and as the legitimate result of it it was promised that strangers shall stand and feed your flocks and the sons of the alien shall be your plowmen and vine dressers and shall build the old wastes and repair the desolations of the cities. National courtesy would result in national aggrandizement, and the hospitality which cheered the stranger should return a sevenfold blessing upon the land. Thus in the Jewish theocracy, that perfect model of a State, because its laws were expressive of infinite wisdom and prescriptive of the Divine will, was furnished a safe asylum for the oppressed of all nations; and no sooner had the foot of the stranger fallen on Judean soil than his person was invested with the respect and affection conferred upon a citizen. Over him the law spread its protecting ægis, and secured to him the rights of one born in the land. No matter from what tribe or of what religion; whether he had joined in the fanatic revelries which had ruffled the bosom of the placid Nile, or assisted in the services of Sidonian worship, or bowed at the altars of Baal and Ashtaroth, or offered his children to the brazen arms of an unpitying Moloch; be he who, or come he whence he might, he was to be embraced in the enclosure of a sacred hospitality, and loved and protected as one born to the manor. Say what we may of the policy of such a law for aliens, we can but admire its generosity and beauty, and revere its principle as the expression of the will of Him beside whom all the gods of the heathen were vanity and a lie.— *W. G. Lord.*

PHILADELPHIA MARKETS.

Flour and Meal.—Flour is still quiet. There is a moderate demand for city use at $9 75 to $11 00 per barrel for common, extra and fancy brands. Rye Flour is held at $7 25, and Corn Meal at $4 37 per bbl. for Pennsylvania.

Grain.—There is very little doing in Wheat; fair to prime red is quoted at $2 30 a $2 35, and 400 bushels of white at $2 42 a $2 48. Rye is selling at about $1 34. Corn is steady at 99c. afloat and 97c. in store. Oats are dull; sales of Pennsylvania at 54c.

Cattle Market.—The arrivals of Cattle during the past week at Wm. L. Torbert's Avenue Drove Yard, by the Pennsylvania Railroad, amounted to 200 head, and at other yards about 1000, making a total of 1200 Beef Cattle, all of which sold at from $9 50 to $11 50 per 100 lbs., which is a decline of 50 cts. and $1 per 100 lbs. 4000 head of Sheep were disposed of at 4½ to 5 cts. per lb., or $1 50 to $5 per head. Lambs sold at $2 00 apiece. 1000 head of Hogs were $8 00 and $8 25 per 100 lbs. 130 Cows and Calves were sold at from $25 to 70. Calves from $3 00 to $6 00 each.

FRIENDS' CENTRAL SCHOOL, BOYS' DEPARTMENT.—The Committee in charge of this Institution having engaged the services of Aaron B. Ivins as Principal Teacher, are now prepared to recommend it to the attention and patronage of Friends and others.

The Boys' School will be re-opened on the first Second day in the Ninth month next, and conducted on the principles heretofore adopted, except that there will be two sessions per day instead of one.

Lectures on the accustomed branches of science will be delivered, as usual, to both schools.

The prices of tuition have been fixed according to the respective classes, at 25 dollars, 20 dollars, and 15 dollars, per term of twenty-two weeks. The only extra charge is for books, as heretofore.

Information on the subject may be obtained on application to

Samuel J. Levick,
200 N. Third St.
Macpherson Saunders,
28 N. Fourth St.
John J. White,
206 Arch St.
Martha Mellor,
5 Franklin St.,
6th mo. 16. Philadelphia.

CHESTERFIELD BOARDING SCHOOL FOR BOYS.—The Summer Session of this Institution will commence on the 21st of Fifth month, and continue twenty weeks.

Terms, Seventy Dollars per session, one-half payable in advance, the other in the middle of the session. No extra charge.

For further particulars, address
HENRY W. RIDGWAY,
Crosswicks P. Office, Burlington Co., N. J.
4th mo. 21—3m.

Merrihew & Thompson, Printers, Merchant ab. 4th.